

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Ronald A. Rudder on 03 April 2009.

The application has been amended as follows: **the first sentence (beginning "color reproducibility" and ending "improved") has been removed from the Abstract in order to make the Abstract compliant with the maximum 25-line limit required for publication.**

The following changes to the drawings have been approved by the examiner and agreed upon by applicant: **Figures 1 – 9 require the label "Related Art."** In order to avoid abandonment of the application, applicant must make these above agreed upon drawing changes.

Claims 1 – 4, 8 and 9 are allowed.

The closest prior art of record referenced herein is Kagawa, et al. (US 2003/0215132 A1), which discloses a method for performing color conversions from an RGB input signal.

The following is an examiner's statement of reasons for allowance:

Regarding **claim 1**, Kagawa, et al. (hereafter, "Kagawa") discloses an RGB input from an image data generator (i.e., imaging apparatus) and its separation into both primary and complementary parts. Fig. 9 discloses that the RGB input is eventually separated and broken down into r, g, b, y, m, and c components ("imaging section having a three primary color... and a complementary color...")

Additionally, Kagawa discloses a signal processing section with a matrix calculation (17) configured to generate three primary color signals (R2, G2, B2) obtained by using both the primary color and complementary color components ("configured to generate three primary color signals by performing matrix calculation process...")

However, neither Kagawa nor the prior art of record disclose or suggest the use of both primary and complementary color filters in conjunction with a matrix calculation based on a luminance comparison as disclosed by the present application.

Although the prior art of record does indicate the occasional united use of both color filters (see US 2004/0174389 A1, Ben-David, et al., Fig. 12), a wide majority of the prior art does not utilize both color spaces in their inventions.

Furthermore, in the relatively few cases where both color systems are utilized in a single invention, the prior art does not disclose or suggest performing a matrix calculation based on the luminance comparison as disclosed by the present application: that is, generating an output signal based upon the primary signal when the luminance obtained from the RGB space is greater than the luminance created by the primary/complementary signal or vice versa when the opposite is true.

Kagawa does disclose a minimum value selector (22c) that inherently makes a decision based on the relative sizes of two signals, but that disclosure does not read upon the presently claimed invention.

As a result, claim 1 is considered allowable.

Claim 9 is an apparatus that implements the structure disclosed in claim 1. It is also considered allowable as a result.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Citation of Pertinent Art

The prior art made of record is considered pertinent to the applicant's disclosure, but is not relied upon as a reference for the preceding sections:

- Mutze (US 5889554 A) discloses a multispectral image generator from a mosaic color filter.
- Kondo (US 4833527 A) discloses a luminance signal forming circuit using matrix operations and complementary color filters.
- Shirashi, et al. (US 5280347 A) discloses a color image sensing device that outputs a luminance value.

Art Unit: 4112

- Asamura, et al. (US 6434268 B1) discloses a color conversion device and method that uses RGB input and differentiates between RGB and RGBYMC before a matrix calculation.
- Komori (US 7418129 B2) discloses an image processing device that takes an RGB input and uses matrix calculation to determine luminance and chrominance.
- Tsuruoka (US 2007/0132864 A1) discloses a signal processing system that takes an input signal and separates it into luminance and chrominance.
- Hashimoto (US 4907074 A) discloses an image pickup apparatus that has a complementary color filter and a luminance forming section.
- Osada, et al. (US 7148925 B2) discloses an imaging device that simultaneously processes two parallel output signals, RGB and Y.
- Roddy, et al. (US 7057654 B2) discloses a hybrid primary/complementary filter of four colors (RGBC.)
- Moriya, et al. (US 2006/0038953 A1) discloses an imaging device using an RGBYC filter.
- Kawahara, et al. (US 5568193 A) discloses a system using both complementary and primary colors with a matrix calculation circuit.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dwight Alex C. Tezano whose telephone number is (571)

Art Unit: 4112

270-7200. The examiner can normally be reached on Monday through Friday 9:30-6:00 with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jefferey F. Harold can be reached on (571) 272-7519. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Dwight Alex C Tezano
Examiner
Art Unit 4112

/Dwight Alex C Tezano/
Examiner, Art Unit 4112

**/David L. Ometz/
Supervisory Patent Examiner, Art Unit 2622**